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(पहला पुनरीक्षण)

Indian Standard

HANDLOOM PILE FABRIC — SPECIFICATION

(First Revision)

UDC 677·617

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

September 1991

Price Group 2

Handloom and Khadi Sectional Committee, TXD 8

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Handloom and Khadi Sectional Committee had been approved by the Textile Division Council.

This standard was first published in 1964 based on IND/TC/0108 'Specification for pile fabric', issued by the Ministry of Defence, Government of India. This standard has been revised in order to overcome certain difficulties encountered by the handloom industry in implementation of this standard.

Following are the important changes carried out while revising this standard:

a) Cotton yarn conforming to IS 171 : 1985 'Specification for cotton and cotton regenerated cellulosic fibre blended grey yarn (*third revision*)' has been specified;

b) Only negative tolerances have been specified on ends/dm, picks/dm and mass g/m^2 to ensure minimum desirable construction;

c) For determing the conformity of fabrics to the requirements laid down in this standard, a provision has been incorporated to allow testing of specimens in prevailing atmospheric condition. However, in all cases of disputes specimens shall be tested after conditioning in the standard atmospheric conditions; and

d) Provision has been incorporated for agreement between the buyer and seller with respect to permissible number of defects in the fabrics.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off values should be the same as that of the specified value in this standard.

Indian Standard

HANDLOOM PILE FABRIC — SPECIFICATION

(First Revision)

1 SCOPE

1.1 This standard prescribes constructional particulars and other requirements for two varieties of handloom pile fabric.

1.2 This standard does not specify the general appearance, feel, finish, etc.

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 ATMOSPHERIC CONDITIONS FOR TESTING

Test specimens may be conditioned and tested in the prevailing atmosphere for determing the conformity of the fabrics to this standard. However, in all cases of disputes, specimens shall be conditioned and tested in the standard atmosphere as specified in the Indian Standards refered on test methods.

4 MANUFACTURE

4.1 Yarn

4.1.1 *Warp and Weft*

The cotton yarn conforming to the requirements laid down in IS 171 : 1985 shall be used.

4.1.2 *Pile*

The worsted yarn spun from 48s quality top shall be used. The twist shall be about 276 turns per metre in single and about 158 turn per metre in the double.

4.2 The cloth (ground) shall be of plain weave (*see also* Annex B).

4.2.1 The cloth shall be scoured and dried. The cloth shall then be brushed to open out the piles and to set them erect. The pile shall be free from undue felting or matting. The cloth shall be free from substances liable to cause subsequent tendering.

5 REQUIREMENTS

5.1 The fabric shall conform to the requirements specified in Table 1.

Table 1 Constructional Particulars and Breaking Load Requirements for Handloom Pile Fabric

Variety No.	Count of Yarn for Guidance only			Ends dm		Picks/dm	Mass g/m²	Thickness, mm	Depth of Pile, mm	Breaking Strength on 15·0 × 20·0 Newtons	
	Warp Universal (Cotton)	Weft Universal (Cotton)	Pile Universal (Worsted)	Cotton	Worsted					Warp	Weft
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1	15 tex × 2 (40s/2)	9·6 tex × 2 (60s/2)	60 tex × 2 (15s/2)	316 (2 ends working as one)	79	220 (2 threads working as one)	485	8·5	12	1 550	1 000
2	15 tex × 2 (40s/2)	9·6 tex × 2 (60s/2)	60 tex × 2 (15s/2)	316 (2 ends working as one)	79	236 (2 threads working as one)	430	6	6	1 550	1 118
Tolerance, percent	—	—	—	−5	−5	−5	−5	±5	±0·5 mm	−5 on average and −15 on individual reading	
Method of Test	—	—	—	← IS 1963 : 1981 →			IS 1964 : 1970 or Annex D	IS 7702 : 1975	IS 7877 (Part 4) : 1976	IS 1969 : 1985	

5.2 The cloth shall also conform to the requirements specified in Table 2.

Table 2 Other Requirements for Handloom Pile Fabric

Characteristics	Requirements	Method of Test
(1)	(2)	(3)
a) Dimensional change, percent, *Max*		IS 665 : 1989
1) Warpway	2	
2) Weftway	2	
b) Scouring loss, percent, *Max*	2	Annex C

5.3 Dimensions

Length and width of the cloth when determined in accordance with IS 1954 : 1969 shall be as agreed to between the buyer and the seller or as declared by the seller. However, average length of pieces shall not be less than the declared or specified length. A tolerance of —2 percent on width shall be allowed.

5.4 In order to illustrate or specify the indeterminable characteristics, such as general appearance and feel of the cloth, a sample has been agreed upon and sealed, the supply shall be in conformity wiih the sample in such respects.

5.4.1 The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

6 INSPECTION

6.1 The cloth when visually inspected should be reasonably free from flaws.

6.1.1 The number of permissible flaws per unit length shall be as agreed to between the buyer and the seller.

6.2 For details of the flaws, a reference may be made to IS 4125 : 1987.

7 MARKING

7.1 The fabric shall be suitably marked with the following information:

a) Name of the material and variety No.,
b) Length (m) and width (cm), and
c) Indication of the source of manufacture.

7.1.1 The fabric may also be marked with the Standard Mark.

8 PACKING

Unless otherwise agreed upon by the buyer and seller, the cloth shall be preferably packed in bales or cases in conformity with the procedure laid down in IS 32 : 1971 or IS 741 : 1971.

9 SAMPLING

9.1 Lot

The quality of the fabric of the same variety delivered to one buyer against one despatch note shall constitute a lot.

9.2 The conformity of the lot to the various requirements specified in the standard shall be determined on the basis of tests carried out on the samples selected from the lot.

9.3 Unless otherwise agreed, the number of pieces selected at random for inspection shall be in accordance with Table 3.

Table 3 Sample Size and Permissible Number of Non-conforming Pieces

Lot Size	Sample Size	Permissible Number of Non-conforming Pieces	Sub-Sample Size
(1)	(2)	(3)	(4)
Up to 25	3	0	2
26 to 50	5	0	2
51 to 150	8	0	3
151 to 300	13	1	3
301 to 500	20	1	5
501 to 1 000	32	2	5
1 001 and above	50	3	8

9.3.1 For selection of samples at random from the lot, procedure given in IS 4905 : 1968 may be followed.

9.4 Number of Samples and Criteria for Conformity

It shall be as follows:

Characteristics	*Number of Samples*	*Criteria for Conformity*
Ends, picks, mass, thickness, depth of pile, length, width and visual inspection	According to col 2 of Table 3	Number of non-conforming pieces shall not exceed the corresponding number given in col 3 of Table 3
Dimensional change, scouring loss and breaking load	According to col 4 of Table 3	All the test pieces shall meet the reqirement

ANNEX A

(*Clause* 2)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
32 : 1971	Code for seaworthy packaging of woollen and worsted yarn and cloth (*second revision*)
171 : 1985	Cotton and cotton regenerated cellulosic fibre blended grey yarn (*third revision*)
665 : 1962	Method for determination of dimensional changes of woven fabrics containing wool on soaking in water (*first revision*)
741 : 1971	Code for inland packaging of wollen and worsted yarn and cloth (*first revision*)
1954 : 1969	Methods for determination of length and width of fabric (*first revision*)
1963 : 1981	Methods for determination of threads per unit length in woven fabric (*second revision*)
1964 : 1970	Methods for determination of weight per square metre and weight per linear metre of fabric (*first revision*)
1969 : 1985	Methods for determination of breaking load and elongation of woven textile fabrics (*second revision*)
4125 : 1987	Glossary of terms pertaining to defects in fabrics (*first revision*)
4905 : 1968	Methods for random sampling
7702 : 1975	Method for determination of thickness of woven and knitted fabrics
7877 (Part 4) : 1976	Methods of sampling and tests for hand-made carpets : Part 4 Determination of pile height

ANNEX B

(*Clause* 4.2)

METHOD OF WEAVING

B-1 METHOD

B-1.1 Separate beams shall be used for cotton and worsted warps.

B-1.2 The reed shall be 36s count.

B-1.3 The weave shall repeat on 6 ends and 8 picks as shown in Fig. 1.

B-1.4 Flat iron bars, with grooves, 12 mm thick for Variety 1 and 6 mm thick for Variety 2, shall be inserted as indicated in Fig. 1. The loops formed on the bars shall be cut by a sharp knife when 15 to 20 cm of cloth have been woven.

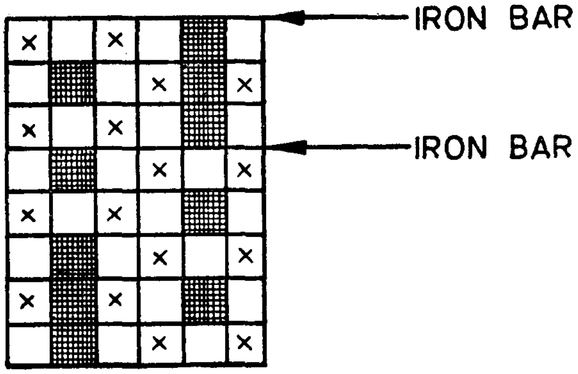

FIG. 1 DESIGN OF PILE FABRIC

ANNEX C

(*Table* 2)

METHOD FOR DETERMINATION OF SCOURING LOSS

C-1 TEST SPECIMENS

Cut from each piece in the sample under test (*see* **9.3**) two square specimens, each weighing roughly 5 g, taking as much care as possible to cut parallel to the warp and weft threads. Trim two sides of the square to a complete thread, and to enable the specimens to be handled without the loss of yarn fragments, pull out 5 threads all round the square so as to leave a fringe.

C-2 PROCEDURE

C-2.1 Weigh two square test specimens drawn from an individual piece separately in their air-dry condition, and extract one test specimen for one hour with chloroform in a soxhlet apparatus. Allow the chloroform to dry off in the air, and wash the specimen by alternate immersion, in hot running water and wringing by hand, 12 times in succession. Immerse the specimen alternatively in 0·5 percent aqueous solution of diastase (20 to 30 times the weight of the specimen) at 50°C and wring by hand 3 times succession and finally return to the solution. Heat it to 70°C. Allow the specimen to remain in the solution for 15 minutes in all, and then wash it well in hot running water exactly as before. Dry this and the second specimen at 110°C side by side, and weigh both separately.

C-2.2 Calculate the percentage moisture content of the second specimen by the following formula:

$$C = \frac{(W_2 - W_4)\ 100}{W_2}$$

where

C = moisture content, percent by weight;

W_2 = air dry weight of the second specimen; and

W_4 = oven-dry weight of the second specimen.

C-2.2.1 Calculate the percentage of scouring loss of the first specimen by the following formula:

$$\text{Scouring loss, percent by weight} = \frac{W_1 - \frac{W_1 C}{100} - W_3 \times 100}{W_1 - \frac{W_1 C}{100}}$$

where

W_1 = air-dry weight of first specimen;

C = moisture content, percent by weight (*see* **C-2.2**); and

W_3 = oven-dry weight of the first specimen after extraction with chloroform and other treatment as prescribed in **C-2.1**.

C-2.3 Repeat the test with other sets of specimens drawn from the remaining pieces and calculate the average value of the scouring loss.

ANNEX D

(*Table* 1)

METHOD FOR DETERMINATION OF MASS OF FABRIC

D-1 Cut four specimens of 100 mm × 100 mm from a sample. Condition all the specimens in the dessicator charged with saturted solution of sodium nitrate at 27 ± 2°C for a period of 24 hours. Remove all the specimens from the dessicator and immediately determine their collective mass in weighing balance to the nearest milligram.

D-2 Calculate mass of fabric in g/m^2.

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